

AMENDMENTS TO THE CLAIMS

1-24. (Canceled)

25. (Currently Amended) The apparatus according to claim 24 36, wherein said control device detects a deviation that is detected when the condition of said optical element is varied, for each different condition of said alignment deflector.

26-28. (Canceled)

29. (Currently Amended) The apparatus according to claim 24 36, wherein said control device determines whether or not there is structure information necessary for the calculation of said a deviation based on said image.

30. (Previously Presented) The apparatus according to claim 29, wherein said control device quantifies the presence or absence of said structure information necessary for the calculation of said deviation in said image.

31. (Canceled)

32. (Previously Presented) The apparatus according to claim 30, wherein said control device effects quantification by a two-dimensional Fourier transform of said image.

33. (Currently Amended) The apparatus according to claim 24 36, wherein the optical element is an objective lens which focuses charged particle beam and/or an astigmatism corrector which corrects an astigmatism of the charged particle beam.

34-35. (Canceled)

36. (New) A charged particle beam apparatus comprising:
a charged particle source;
an optical element for adjusting a charged particle beam emitted by the charged particle source;

an alignment deflector for aligning the axis of the charged particle beam with respect to the optical element;

a control device for calculating an alignment correction value of the alignment deflector based on an image movement amount detected when the optical element is varied and a calculation formula indicating that a value obtained based on a calculation of a proportion of a parameter indicating a change amount of the image movement amounts before and after supplying a predetermined signal to the alignment deflector, with respect to the predetermined signal is equal to a value obtained based on a calculation of a proportion of the image movement amounts before supplying a predetermined signal to the alignment deflector, with respect to the alignment correction value; and

selecting means for selecting whether or not to calculate the parameter,

wherein the control device calculates the parameter based on images before and after supplying the predetermined signal to the alignment deflector to calculate the alignment correction value based on the calculated parameter and the calculation formula, when calculating the parameter is selected by the selecting means,

wherein the control device calculates the alignment correction value based on the calculation formula and the parameter which is stored in a memory in advance, when calculating the parameter is not selected by the selecting means.

37. (New) A charged particle beam apparatus comprising:
a charged particle source;
an optical element for adjusting a charged particle beam emitted by the charged particle source;
an alignment deflector for aligning the axis of the charged particle beam with respect to the optical element;

a control device for calculating alignment correction value of the alignment deflector based on an image movement amount detected when the optical element is varied and a calculation formula indicating that a value obtained based on a calculation of a proportion of a change amount of the image movement amounts before and after supplying a predetermined signal to the alignment deflector, with respect to the predetermined signal is equal to a value obtained based on a calculation of a proportion of the image movement amounts before supplying a predetermined signal to the alignment deflector, with respect to the alignment correction value; and

selecting means for selecting whether or not to calculate a parameter indicating a relative sensitivity ratio of x component and y component of the alignment correction value of the alignment deflector,

wherein the control device calculates the parameter based on images before and after supplying the predetermined signal to the alignment deflector to calculate the x and y components of the alignment correction value based on the calculated parameter and the calculation formula, when calculating the parameter is selected by the selecting means,

wherein the control device calculates the x and y components of the alignment correction value based on the calculation formula and the parameter which is stored in a memory in advance, when calculating the parameter is not selected by the selecting means.